

INTRODUCTORY LECTURE

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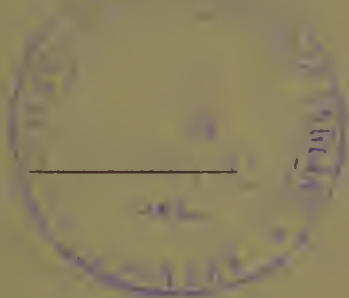
MIDDLESEX HOSPITAL.

OCTOBER 1st, 1877.

BY

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ANATOMY, ETC.



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MR. CHAIRMAN AND GENTLEMEN,

My task to-day seems difficult, yet it is easy. Difficult, when I remember those who each year have spoken words of wisdom and encouragement from this place. Easy, when I turn to you, my audience, knowing that my shortcomings will be more than covered by that kind indulgence which I feel sure will be granted me to-day.

If my demands are large I am conscious your liberality will be accorded in needful measure.

Although the majority of us are mainly concerned with the present and the future far more than with the past, yet there are occasions when a retrospect of the past is the strongest stimulus to future work.

It is with this feeling I believe a short survey of the early history of this Hospital and this School will not be without its interest.

To the writings of a former Surgeon and Lecturer on Anatomy and Physiology, and a Governor of this Hospital, Mr. Erasmus Wilson, I am indebted for most of the facts I am about to lay before you.

About 130 years ago the "Middlesex Infirmary," as it was then called, consisted of two small houses in Windmill Street, Tottenham Court Road. A year or two later, in 1747, in order to increase the accommodation, the Governors appear to have

given up their Committee Room for the reception of patients, and it seems strange to relate how the business of the institution was conducted at "The Turk's Head," "The Bear and Rummer," and other neighbouring taverns.

But the Hospital had to accommodate itself to the needs of a growing neighbourhood, and a site for a new building was chosen in "Marybone Fields," the first stone being laid by the Earl of Northumberland, on the 15th of May, 1755.

History informs us that this stone was laid whilst a fierce thunderstorm raged over London; and the painting by Pine in the "Board Room," depicting the ceremony, truly represents this scene. But the painter, with that suggestive genius belonging to his art, has, I see, introduced into his work a distant gleam of sunshine, fit emblem of the light of that skill and the warmth of that charity which ever characterise the noble profession you are entering to-day, and which we know full well have not been lacking in those who, for more than a century, have manfully striven within these walls to dispel the darkness of sin and the gloom of human misery and suffering.

The celebrated David Garrick, more than once, aided the funds of the Institution by giving benefit plays. I cannot refrain from speaking of another illustrious man—the famous composer Handel. His musical performances about this time were the means of placing in the hands of the Treasurer over £1000. Although we cannot now learn whether Handel himself conducted on any of these

occasions, his name over the doorway of one of the wards silently testifies to the closeness of his association with the hospital.

A west wing was completed in 1776, and the houses which had been in progress in Berner's Street were finished. At the request of some of the inhabitants a row of trees was planted in the court in front of the Hospital, but these have long since disappeared.

Ten years later we learn that the funds at the disposal of the Governors were in such a satisfactory condition that an east wing was added, and the building began to assume its present form.

It is exactly 100 years since the condition of the ground in the rear of the Hospital came before the notice of the weekly Board. Till then it had been waste uncultivated ground. It was, therefore, wisely decided to crop it with vegetables for the use of the patients.

The fine poplars, which are such a feature in the present garden, were planted a few years later.

But this plot of ground, which the matron at one time stated could not be made to yield even a profitable crop of vegetables, was soon to be put to a better use and a nobler purpose. This theatre, in which we are now met, reminds us of something more enduring, which has been planted here since, and that purpose I need not tell you is the same to-day which filled the hearts and minds of those who first met here more than forty years ago.

We find in 1834 that two of the largest parishes in the metropolis had grown up around the

Hospital, and the Governors trusting in that liberality which had hitherto supported them, decided to extend each wing for a distance of thirty feet towards the street, and there can be no doubt that the ready response which the public gave to their appeal stimulated the Governors to the erection of a Medical School.

It was in April, 1835, that the medical officers drew up an address, stating very fully their reasons for urging the foundation of a Medical School.

The celebrated school in Windmill Street, so closely associated with the name of John Hunter, had just been broken up. New schools of medicine and new hospitals were rising, and the officers connected with this hospital were desirous—I am quoting their own words:—"That the liberal support which the Institution receives from a generous public should be repaid to society by a continual provision of skilful practitioners, made such by a knowledge to be acquired in the Hospital, being convinced that there is an intimate connection between the promotion of its immediate purposes and the extension of that science on which the relief and prevention of disease depend."

To this address, amongst other names, are appended those of Thomas Watson and Charles Bell.

It can be no matter for surprise to learn that, in less than half a year from the date of this appeal, the Medical School was duly opened. What it has accomplished in the past and what it may yet accomplish in the future, it is not for me to speak. Yet these names may suggest to many memories of

the past, and to those of us who are youngest become

“ A link among the days to knit
The generations each with each.”

The comparatively recent death of the aged widow of Sir Charles Bell, a surgeon so gifted that it mattered not to him whether he handled the scalpel, the pencil, or the pen, has severed nearly the last link that bound him to us, except in memory.

It is, however, still a privilege as well as a pleasure to speak of Sir Thomas Watson, though old in years, yet young and vigorous in mind, still able and still willing to attract us by the charm of his writing and the weight of his long experience.

I need trace no further this meagre outline, but I would remind you that up to a comparatively recent date science was nowhere systematically taught, if we except the medical schools. The older universities, unwilling to embrace these new wants, the birth of a new era, clung to the old traditional method of teaching, and only now are beginning heartily to recognise the real value of natural science as a branch of general education and culture. We should all remember that it is to the laborious and long-continued efforts of men of science, imbued with the pure spirit of research, that we owe in large measure our rapid advance in civilisation and our greatness as a nation.

Whilst the medical schools have grown up as necessary offshoots of those charitable institutions which everywhere mark the progress of a civilised

people, having been created for the education of a special class of men, we must not forget that they have had a still wider influence and use. For have they not found fitting employment for the energies of many, who in their own departments stand in the foremost rank of scientific investigators? The scientific discoverer must ever lead the way. Applied science, coming after, takes up the thread of discovery, and once guided into a useful channel industries are created and commerce spreads.

It must be evident "that practical applications cannot be made until the scientific facts or principles, upon which those applications rest, have been discovered."

Illustrations of this order of evolution are full of interest.

Black's researches on the latent heat of steam paved the way to Watt's discovery, and still later to the inventions of Stephenson. We must be grateful to Black and Watt, as well as to Stephenson, for the presence here to-day of some from a distance who wish us well.

The ancient science of chemistry yields many striking examples.

As a science it exercises a kind of creative power over the elements, setting them free, or cementing them into new relations, and as an art it is vital to the right progress and development of manufacturing industry.

More than 100 years ago Scheele discovered chlorine, a gas unknown in a free state. By combining this with lime, the well-known "bleaching

powder" is formed, and on this hangs the very existence of the great paper and cotton factories, and the daily labour of thousands of our fellow-countrymen.

We can read the same kind of history in the substance known as benzole, which Michael Faraday discovered, now fifty years since. A step forward was taken when from this aniline was prepared. But chemists regarded the little known substance as a mere chemical curiosity! and it stood for a time on the laboratory shelf useless. Busy minds, however, were working at the new compound, and as it became better known, it was found capable of yielding the most brilliant dyes. Aniline is now manufactured by the ton and our fabrics carry its colours all over the world.

Liebig had discovered chloroform years before our own countryman Simpson applied it to the relief of pain.

Sir Isaac Newton, when he divided white light into its primitive colours, little foresaw he was laying the foundation for one of the most marvellous discoveries of modern times. Yet Wollaston years after passed his beam of light through a slit instead of a round hole, and the lines of the solar spectrum were for the first time visible. It was still left to Fraüenhoffer and others to interpret their meaning, and to-day men of science are able to speak of the elements which enter into the composition of distant worlds, and you or I by the aid of the spectroscope could detect infallibly the presence of blood in solution, in amount so small

that our microscopes would be useless in the search. To take an illustration which more nearly concerns us to day. Addison, in 1842, saw the corpuscles which float in our blood pass through the walls of the smaller blood-vessels, a scientific fact of no moment, apparently, and almost forgotten, when Cohnheim confirmed the observation; yet the pathology most popular at the present time mainly rests on the now well-known migratory powers of the so-called "wandering cells."

But I might weary you with illustrations, all tending to show how the purely scientific worker has often supplied the material which, later on, others have utilised.

Great discoveries are not made at a leap; they follow slowly after years of patient labour.

It has been truly said by a great living Philosopher "All great things come slowly to the birth."*

Copernicus is said to have been for thirty-three years elaborating his great work on the solar system; Newton for twenty years pondered over the laws of gravitation; Harvey for twenty-six years laboured to mature his views on the circulation; and for more than twenty years Darwin was unfolding the difficult problem discussed in 'The Origin of Species.'

I am not to-day going to weary you with a long survey of the subjects you will have to take in hand. Medical education is "cut and dried," and we must deal with it as it is. I would rather offer you, as

* Professor Tyndall's Address at Belfast.

far as I am able, a few suggestions which may help to lighten your coming labours.

One almost shudders at a first glance at the number of subjects embraced in the medical curriculum, and the amount of time you must devote to each to gain a fair knowledge even of their rudiments. I anticipate havoc in the ranks of this army of subjects, and prophesy the exclusion of several from the medical course, for I am not alone in thinking they never ought to have gained a foothold there, not because such knowledge is unimportant, for of no branch of knowledge can this be said at the present day ; but because it should have been sown, and should have borne its fruits, before you commence your new duties in a medical school.

Anatomy must ever remain one of the great central subjects of your medical studies. Like the keystone of the arch, touching both halves of your work—medicine on the one hand, surgery on the other—and fitly crowning the span of your knowledge, for without it neither side could stand secure. For these reasons, therefore, I beg to offer you a few general remarks on this subject of anatomy.

Anatomy should occupy much of your time during the first two winter sessions of your work. The college standard is now high, too high, I venture to think, in one respect, since a very large proportion of what you so laboriously gather is forgotten in a few weeks.

When you engage later on in active practice the broadest outlines alone remain, and few men are able to keep up a knowledge of anatomical details

in the face of so much in other branches which is new and pressing.

The college demands all this, and therefore you must have it at your fingers' ends.

Do not think for a moment I undervalue a knowledge of anatomy. It is the kind of knowledge, and not the amount, which I am disposed to call into question.

All that by your skill as dissectors you can demonstrate and verify is valuable; much of the knowledge you gain by reading alone is useless. The difference between seeing a thing and reading about it is not to be measured. The knowledge gained by the one method is practical and lasting, that gained by the other is theoretic and fleeting. Therefore let me urge you to work diligently in the dissecting room, for though you will forget much you will learn more, and if you do not become accomplished anatomists you will have learnt enough, I promise you, to make you cautious hereafter. But there is a more encouraging side to all this; you are learning whilst you dissect—not anatomy simply—you are gaining habits of observations, you are training the eye and you are educating the hand.

The value of sketching in outline will assist you much in your work. You should, if possible, sketch all you see under the microscope, and make outline drawings of your dissections. Dr. Aeland has, I think, very wisely insisted on the value of drawing. In an address, delivered nearly ten years ago, he said, "Of course you all practise out-of-door sketch-

ing when you can. Sir Charles Bell, Seymour Haden, Henry Monro Chambers, and Solly, have shown you the way, and if you do not follow, when you are older you will make bad diagrams and will be worse lecturers than you might have been."

But the art of drawing has a far more practical bearing. I believe it may be a great aid to a medical man throughout his whole professional career. It would take up too much of your time to cite instances in proof of this, and happily these are too evident to escape those who consider the subject, but I may remark, that a careful drawing of a well prepared dissection or a microscopical preparation may save hours of book drudgery, and must lead to clear and accurate ideas. To the busy practitioner the rapid sketch of a morbid growth or the mere outline of a diseased limb may convey to the mind more than pages of careful notes.

To those who teach good diagrams are absolutely essential, and none are so good as those fresh from the hand of the teacher himself.

Drawing may be said pre-eminently to cultivate the eye as to form, size and relation; and it certainly educates the touch in a manner scarcely second to the use of the scalpel in the dissecting room. When it is remembered that, in many surgical operations, the knife is carried in curves or in straight lines, surely it must be some satisfaction to the surgeon to feel that his eye has been previously educated in these things and will safely guide his hand.

I make bold to hope that instruction in the art of

sketching and painting will become hereafter a part of our own curriculum.

One has only to glance at the beautifully executed drawings of Sir Charles Bell and Sir Robert Carswell to feel that such men have set us an example in this direction, which all must admire and more of us might follow with gain.

The advantage of conveying to our mind anatomical facts by diagrams and drawings, by appealing directly the eye, is becoming more and more apparent.

Gray's 'Anatomy' is justly famous for its plates. If you take the trouble to examine and compare the earlier with the later editions of Quain and Sharpey's 'Anatomy' Carpenter's 'Human Physiology' and Kirke's 'Handbook,' you will see how the editors have slowly, but surely, recognised the value of illustrations.

We may even now hope to see the enormous mass of details, which but a small knowledge of anatomy implies, gathered with less labour and more easily retained when diagrams change places in our hand-books with descriptions.

The charts on which the physician traces the daily variation in the temperature of his patients and other conditions which may be important tell him more at a glance than the notes in his case book. It may be hoped, moreover, that drawings of diseased organs or of injuries will take the place of complicated descriptions, and that the pathological specimens so largely represented on the shelves of our museums will, when possible, be supplemented

by drawings of their typical appearances when recent.

But anatomy is embraced in the needs of other crafts besides the surgeon's. The artist too requires a knowledge of anatomy for the successful prosecution of his art. Yet we must bear in mind that long before the scalpel had displayed the wonders that lay hidden in the bodies of man and beast, cunning hands had laboured, and not in vain, to perpetuate their form in stone or in marble.

Both ancient Greece and modern Italy seem to have shared alike an exquisite appreciation of the lovely harmony and symmetry of the human form.

Alberti says "we ought not so much to love the likeness as the beauty, and to choose from the fairest bodies severally the fairest parts," and Guido sighs for the wings of an angel to ascend to Paradise and behold with his own eyes the forms and faces of the blessed spirits, that he might put more of heaven into his pictures.*

The highest ideal of beauty must ever be in harmony with the truest expression of form. The artist seems to have, here and there, caught the spirit of deeper truths which, ages after, the labours of the comparative anatomist have established.

The few examples of unmutilated Greek feet which remain to us, if compared with the conventional foot of the present day, will serve to explain my meaning.

The great toe of the human foot is developed, as you are aware, in adaptation to man's progress in

* Pilkington's 'Dictionary of Painters.'

the upright position. So characteristic of man, nevertheless it is the first to dwindle and disappear in the descending scale of animal forms. The little toe is next lost, but the three middle toes are much more constant and more alike in size and strength.*

Now, turning to the works of the ancient Greeks, we see how faithful and how true they were to nature. The great toe of the Greek foot is as truly proportioned as the little toe, and the relations of the three middle toes as contrasted with the first and last.

But this ideal of the beautiful and the true was, strange to say, almost confined to Greek art.† Some of the finest works in our National Gallery wrongly represent the toes as progressively decreasing from the second to the fifth.

I have no time to urge upon you, as I ought, the kindred study of physiology. It has been lately said by one of the most gifted workers in this field — "There is no side of the intellect which it does not call into play, no region of human knowledge into which, either its roots or its branches, do not extend, like the Atlantic between the old and the new worlds, its waves wash the shores of the two worlds of matter and of mind."‡

Of the other subjects I must forbear to speak,

* Owen, 'Archetype and Homologies of the Vertebrate Skeleton.'

† In illustration of this see No. 171 (Mereury), also 109 and 118, in the British Museum; and in the Hellenic Room, the lovely figure of "an athlete," and also the "Apollo." In our National Gallery the celebrated picture by Benjamin West represents some exquisite feet of the Grecian type.

‡ Huxley's 'Aberdeen Address,' as Lord Rector of the University.

for if you work as you should at anatomy and physiology I have no fear for the rest. As students you will, of course, receive without doubt much that you are taught as absolutely true and certain. But you should never fail to ascertain the reasons for believing what you are told where it is not self-evident. By this method you will be best training yourselves for duties which will come later in life.

Learn to place facts in the one scale and theory in the other. We may liken facts in science to pure gold, which theory shapes and moulds into the forms best suited to the mind and the need of each age.

You cannot value facts too highly, you may easily over-rate the importance of theories.

Remember that the best kind of knowledge is not gained in the lecture-room or in the study, but in the dissecting-room, the post-mortem room, and in the hospital ward.

Such knowledge is a life-long possession. It may grow dim, but it is never forgotten. It is always there, and has been well-likened "to the inscription on a battered and defaced coin" ready to come out whenever you warm it.

Contrasting our own profession, the profession of medicine with the other so-called learned professions, it must be obvious, I think, to all of you that, whilst the faculties and powers of the mind are exercised alike in all, the special cultivation of the senses is necessary in ours alone. Those senses which are the avenues through which alone a knowledge of the outer world flows into and

becomes a part of our higher being must be taught to do their work as highly trained and willing assistants.

How essential it is for the eye to be taught to recognise instantly a change of form or of colour. It is by comparing an injured limb with the sound one that the surgeon often learns by a look the nature of the injury or discovers by their tint the most appropriate management of the contents of a hernial sac.

The ear, too, must be educated ; for on a right appreciation of their sounds the physician learns the state of the great organs within the chest.

By the sense of touch, moreover, the practitioner is enabled to detect the presence of a deep-seated abscess or the temperature of a joint.

And although I must grant you the delicate filaments of the special nerve of the smell are often offended in our daily work, yet I venture to assert that not one of you would wish to dispense with this useful faculty even for an hour, for it often assists us in our investigations, and should be ever on the alert to warn us of noxious influences which might be hurtful to our patients.

We should endeavour, then, to educate our senses, for their capabilities are great. As the blind man acquires a touch surpassing our experience, so should we strive to develop these half expanded powers. I have often thought that John Hunter owed much of his great fame to the manual skill he gained as a cabinet maker in his early life.

We should bear in mind that, although the skill

of the optician gained for us a new realm, outside the range of unaided vision, when he constructed the microscope, yet to see aright the eye must have a special training.

The murmurs of respiration, or the rush and reflux of the blood, as it flows through the great centre of the circulation, are heard to no better purpose by the use of the stethoscope if the ear be untutored.

Whilst we extend the sweep of our knowledge by means of the microscope, the ophthalmoscope, and the thermometer, let us watch, lest our own organs of perception, best instruments of all, created by an Eternal Will, and step by step evolved, through lower forms to near perfection, be unequal to the requirements of these higher duties.

Every side of the intellect must be trained, every right capacity of the body must be developed, if we would work to good purpose. Those higher faculties and nobler aspirations, which express the moral side of our nature, can never flag if the object and the end be so good.

Remembering the history of the past, it requires, I think, no prophet to predict in what direction we may hopefully look for advance in the future.

We should ever remind ourselves that cause and effect work out their end with untiring round for good as well as for evil; and a wiser generation, more in harmony, because more fully understanding the laws which govern men and the world on which they exist, will better escape those ills which surround us to-day.

